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EXAMINER

YAN, REN LUO

ART UNIT

PAPER NUMBER

2854

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/888,692

Applicant(s)

BOSLER ET AL

Examiner

Ren L Yan

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 June 2001.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

4) Claim(s) 1-43 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-43 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.

4) Interview Summary (PTO-413) Paper No(s) _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

DETAILED ACTION

1. The drawings are objected to because drawing figure 7B is missing. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. Claims 9, 25 and 33 are objected to because the recitation of "said heat curable ink" in each of the claims does not find proper antecedent basis.
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 10-14, 16-18, 26, 27, 29, 33-35 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borgardt(5,606,914) in view of Asano(6,161,930). The patent to Borgardt teaches the method and apparatus for printing an extruded sheet as claimed including a plurality of printing units 4 for carrying out multicolor printing and each of the printing units having at least one printing roller 42 and an impression drum 44 for printing ink on the sheet when the sheet is fed between the printing roller and the impression drum. See Figs. 1-3 in Borgardt for details. However, Borgardt does not teach to raise the temperature of the sheet prior to be printed. Asano teaches in a printing apparatus the use of a preheater to preheat the printing medium to a required temperature before the printing operation in order to enhance the ink fixing performance of the print. See the abstract of Asano for example. In view of the teaching of Asano, it would have been obvious to those having ordinary skill in the art to provide the printing apparatus of Borgardt with a preheater appropriately disposed to preheat the sheet prior

to the printing operation so as to enhance the printing quality. With respect to claims 12, 36 and 43, Asano does not teach to preheat the printing medium to the temperature range as recited.

However, since Asano does teach to preheat the printing medium for its stated advantage, one of ordinary skill in the art would be able to determine the optimum temperature range for the sheet based on the type of sheet materials and the kind of inks used through routine experimentations.

Such a determination would have been an obvious expedient. Regarding claims 13 and 35, the ink used in Borgardt is a heat curable ink. Note the heater 6 as shown in Fig. 3 of Borgardt.

Regarding claims 14 and 27, see column 4, lines 49-53 in Borgardt for the teaching of using a gravure printing unit 4e. With respect to claims 16 and 33, see column 2, lines 57-65 in Borgardt for the teaching of controlling the temperature of the print plates on the printing rollers by cooling.

5. Claims 3, 4, 19-21 and 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borgardt in view of Asano as applied to claims 2 and 18 above, and further in view of Sable(3,576,367). Borgardt, as modified by Asano teaches all that is claimed except for the use of a vacuum drum. The patent to Sable teaches in a printing apparatus the conventional use of a vacuum drum 31 with positioning roller 41 for effectively positioning and holding the sheet on the vacuum drum during printing. See Fig. 1 in Sable for example. It would have been obvious to those having ordinary skill in the art to provide the printing apparatus of Borgardt, as modified by Asano with a vacuum drum as taught by Sable so as to facilitate holding the printing medium against the drum surface during feeding and printing.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Borgardt in view of Asano as applied to claim 2 above, and further in view of Corse(3,905,533). Borgardt, as

modified by Asano teaches all that is claimed except for the impression drum being formed of a flexible material. Corse teaches in column 1, lines 10-16 that it is known to make the impression drum in a printing press with a flexible material. It would have been obvious to one of ordinary skill in the art to provide the impression drum surface of Borgardt, as modified by Asano, with a flexible material as taught by Corse.

7. Claims 6-8, 22-24, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borgardt in view of Asano as applied to claims 1 and 17 above, and further in view of Goel(4,023,894). Borgardt, as modified by Asano teaches all that is claimed except for the use of a vacuum belt. Goel teaches in a printing apparatus the conventional use of a vacuum belt 38 for holding the sheet 34 against the print roller 10. See Figs 1 and 2 in Goel for example. It would have been obvious to those having ordinary skill in the art to provide the printing apparatus of Borgardt, as modified by Asano with a vacuum belt as taught by Goel so as to facilitate holding the printing medium against the printing roller during printing operation. Regarding the temperature range recited in claim 41, see statement above in regard to claims 12, 36 and 43.

8. Claims 9, 15, 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borgardt in view of Asano as applied to claims 1 and 17 above, and further in view of Spain et al(5,662,977). Borgardt, as modified by Asano teaches all that is claimed except that Borgardt does not teach to emboss the sheet. Spain et al teach in a process and apparatus for making plastic siding panels the step of using embossing rollers to provide an embossed wood grain pattern on top of the printed ink. See the abstract and Figs. 1-6 in Spain et al for example. It would have been obvious to those having ordinary skill in the art to provide the printing machine

of Borgardt, as modified by Asano, with embossing rollers appropriately disposed as taught by Spain et al so as improve the appearance of the printed sheet. With respect to claims 15 and 28, the recited material for the sheet being printed is clearly taught by Spain et al in column 4, lines 19-29. The mere use of a known sheet material to be printed on in view of the teaching of Spain et al would have been most obvious.

9. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Borgardt in view of Asano as applied to claim 29 above, and further in view of Bosen et al(6,371,019). Borgardt, as modified by Asano teaches all that is claimed except for the means for selectively lowering and raising printing rollers. Bosen et al teach in a multicolor printing press of a similar type the provision of removably disposed unit 3 for selectively positioning a printing roller 7 relative to an impression cylinder 4 by lowering and raising the printing roller. See column 5, lines 43-59 in Bosen et al for example. It would have been obvious to those having ordinary skill in the art to provide the printing units of Borgardt, as modified by Asano with means for selectively lowering and raising the printing rollers as taught by Bosen et al so that different types of printing rollers can be selectively used to suit a particular printing requirement.

10. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borgardt in view of Asano as applied to claim 17 above, and further in view of Schonberger(5,656,083). Borgardt, as modified by Asano teaches all that is claimed except for the use of a doctor blade for applying ink to the printing roller. Schonberger teaches in a printing apparatus having a doctor blade device pivotally mounted so as to be raised or lowered towards and away from the printing roller 1 to apply ink to the roller. See Fig. 1 in Schonberger for example. In view of the teaching of Schonberger, it would have been obvious to those having

ordinary skill in the art to provide the printing apparatus of Borgardt, as modified by Asano with a doctor blade device pivotally mounted so as to be movable relative to the printing roller so as to apply the printing roller with an ink film in a desired thickness.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ren L Yan whose telephone number is 703-308-0978. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 703-305-6619. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Ren L Yan
Primary Examiner
Art Unit 2854

Ren Yan
Sept. 26, 2003